

SLIP RING LASER ILLUMINATOR FOR SPEED DOMES

CLAIMS

I claim:

1. [cancelled by pre-amendment]

2. [cancelled]

3. [currently amended] ~~A~~ The fibre optic illuminator for surveillance speed domes of Claim 2,
in which:

a) a beam from a light source is carried via a fibre optic cable to provide illumination from within a surveillance speed dome;

b) the light source's heavy components, comprising a power supply and a heatsink, are mounted outside the surveillance speed dome;

c) the light source's power supply and heatsink are mounted in a base for a support for the surveillance speed dome.

4. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 3, in which the support is a bent pole from which the surveillance speed dome is suspended.

5. [cancelled by pre-amendment]

6. [cancelled by pre-amendment]

7. [currently amended] A The fibre optic illuminator for surveillance speed domes of ~~Claim 2~~, in which:

a) a beam from a light source is carried via a fibre optic cable to provide illumination from within a surveillance speed dome;

b) the light source's heavy components, comprising a power supply and a heatsink, are mounted outside the surveillance speed dome;

c) the beam from the light source is carried via a fibre optic cable to provide illumination from within a surveillance speed dome and an illuminator dispersing lens is mounted on a motorized subcarriage by which the position of the illuminator dispersing lens can be changed with respect to a fibre optic cable outlet to change an angle of dispersion of illumination.

8. [currently amended] The fibre optic illuminator for surveillance speed domes of Claim ~~4~~ 7, in which the fibre optic cable outlet and the illuminator dispersing lens are mounted on a carriage that is rotatable within the surveillance speed dome.

9. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 8, in which a camera is mounted on the carriage by means of a motorized pivot mechanism that allows the camera to pivot perpendicular to a plane of rotatability of the carriage within the surveillance speed dome.

10. [cancelled]

11. [cancelled]

12. [cancelled]

13. [currently amended] A The fibre optic illuminator for surveillance speed domes of Claim 2, in which:

a) a beam from a light source is carried via a fibre optic cable to provide illumination from within a surveillance speed dome;

b) the light source's heavy components, comprising a power supply and a heatsink, are mounted outside the surveillance speed dome;

c) the beam from the light source is carried via a fibre optic cable through an optical slip joint to provide illumination from a fibre optic cable outlet within the surveillance speed dome, one side of the optical slip joint being rotatable through multiple rotations within the surveillance speed dome;

d) an optical slip ring aligns an open end of a fibre optic cable with a rotatably opposing open end of the fibre optic cable within a sealed joint housing such that the beam from the light source can travel across a small air space from the open end of the fibre optic cable attached to the light source to an opposing rotatable open end of a further fibre optic cable to the fibre optic cable outlet from which the beam from the light source is dispersed to illuminate a desired area;

e) the optical slip ring aligns the open end of the fibre optic cable with the rotatably opposing open end of fibre optic cable within the sealed joint housing such that the center of the fibre optic cable is aligned with an axis of rotation of the opposing open end with respect to the open end;

f) the optical slip ring is surrounded by multiple channel electrical slip rings and brushes to provide low level power for a video signal and power for a surveillance camera from a stationary

support to a rotating carriage on which the surveillance camera is mounted within the surveillance speed dome.

14. [currently amended] ~~A~~ The fibre optic illuminator for surveillance speed domes ~~of Claim 2~~, in which:

a) a beam from a light source is carried via a fibre optic cable to provide illumination from within a surveillance speed dome;

b) the light source's heavy components, comprising a power supply and a heatsink, are mounted outside the surveillance speed dome;

c) the beam from the light source is pulsed and a surveillance camera is synchronized such that it does not collect light until just after the time required for each pulse of the beam from the light source to be emitted from the fibre optic cable outlet and to bounce back to the surveillance camera from an inside surface of the speed dome, but does collect light thereafter until the time required for the beam from the light source to be reflected from a target area back to the surveillance camera.

15. [cancelled by pre-amendment]

16. [cancelled by pre-amendment]

17. [cancelled by pre-amendment]

18. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 4, in which the fibre optic cable outlet is mounted adjacent to and in alignment with a surveillance camera and an illuminator dispersing lens is positioned adjacent to the fibre optic cable outlet such that the beam from the light source emitted from the fibre optic cable outlet is dispersed in the general direction in which the camera is pointed.

19. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 18, in which:

a) a laser beam from the light source is carried via a fibre optic cable through an optical slip joint to provide illumination from the fibre optic cable outlet within the surveillance speed dome, one side of the optical slip joint being rotatable through multiple rotations together with the surveillance camera mounted within the surveillance speed dome;

b) an optical slip ring aligns an open end of the fibre optic cable with a rotatably opposing open end of the fibre optic cable within a sealed joint housing such that the laser beam can travel across a small air space from the open end of the fibre optic cable attached to the light source to

an opposing rotatable open end of a further fibre optic cable and thereby to a fibre optic cable outlet from which the laser beam is dispersed to illuminate a desired area;

c) the optical slip ring aligns the open end of the fibre optic cable with the rotatably opposing open end of fibre optic cable within the sealed joint housing such that the centre of the fibre optic cable is aligned with an axis of rotation of the opposing open end with respect to the open end;

d) the optical slip ring is surrounded by multiple channel electrical slip rings and brushes to provide low level power for a video signal and power for the surveillance camera from a stationary support to a rotating carriage on which the surveillance camera is mounted within the speed dome.

20. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 18, in which the beam is pulsed and the surveillance camera is synchronized such that it does not collect light until just after the time required for each pulse of the beam to be emitted from the fibre optic cable outlet and to bounce back to the camera from an inside surface of the speed dome, but does collect light thereafter until the time required for the beam to be reflected from a target area back to the surveillance camera, and each pulse has a duration that is less than the time it takes light to travel from an outer surface of the speed dome to a target area and back to the surveillance camera, in order that returning light during a camera light-collection phase will not overlap within the speed dome with light reflected from the inside

surface of the speed dome from an end portion of the beam emitted from the fibre optic cable outlet.

21. [unchanged from previous amendment] The fibre optic illuminator for surveillance speed domes of Claim 19, in which the fibre optic cable outlet, the illuminator lens and the camera are mounted on a carriage that is rotatable within the speed dome, and the laser beam is pulsed and the surveillance camera is synchronized such that it does not collect light until just after the time required for each pulse of the laser beam to be emitted from the fibre optic cable outlet and to bounce back to the camera from an inside surface of the speed dome, but does collect light thereafter until the time required for the laser beam to be reflected from a target area back to the surveillance camera, and each of the laser beam pulse has a duration that is less than the time it takes light to travel from an outer surface of the speed dome to a target area and back to the surveillance camera, in order that returning light during a camera light-collection phase will not overlap within the speed dome with light reflected from the inside surface of the speed dome from an end portion of the light source pulse emitted from the fibre optic cable outlet.